



Infectious Disease Epidemiology Report

Salmonellosis Surveillance Report- Maine, 2005



Introduction

Salmonellosis is one of the most frequent foodborne diseases reported in Maine. Nationwide, an estimated 1.4 million infections occur each year, resulting in approximately 15,000 hospitalizations and 400 deaths. This report provides a summary of the 2005 surveillance on *Salmonella* infections reported to the Maine Center for Disease Control and Prevention (Maine CDC).

Methods

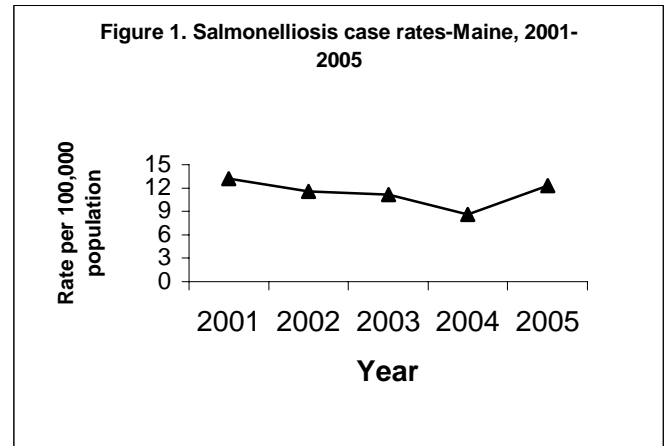
Salmonellosis is a reportable disease in Maine. The Maine Center for Disease Control and Prevention investigates and collects surveillance data on all laboratory confirmed reports of enteric pathogens. Maine-specific data presented here were extracted from the National Electronic Telecommunications System for Surveillance (NETSS), a disease-reporting database, and an enteric spreadsheet maintained by the Health and Environmental Testing Laboratory (HETL). Population denominators are from the 2000 census data.

Results

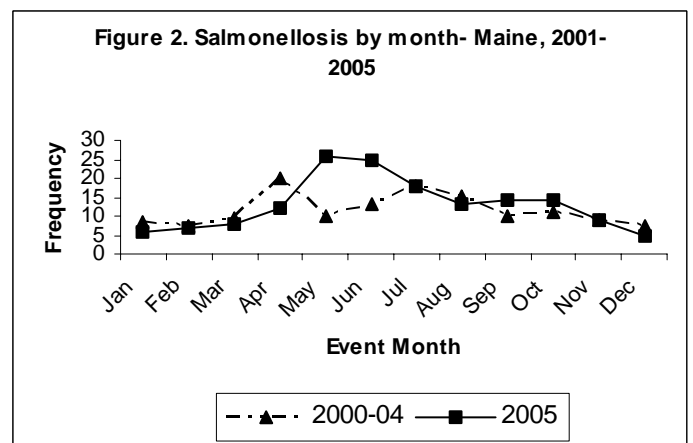
During 2005, a total of 157 confirmed cases were reported¹. This represents a crude case rate of 12.3 per 100,000 population or approximately 1 case of salmonellosis for every 8,130 persons in Maine. Eighty-nine cases (57%) were in females; 38 cases (24%) occurred in children under the age of 15 years. The average age of cases was 35 years, with a range of 5 months to 92 years. Serotypes Enteritidis, Heidelberg and Typhimurium ranked as the three most commonly reported isolates, accounting for nearly 40% of all isolates submitted to the HETL.

Five-Year Trend: Figure 1 illustrates the incidence rates of salmonellosis from 2001 to 2005. The 2005 case rate of 12.3 per 100,000 was somewhat greater than the five-year median of 11.1 per 100,000 population.

¹ Based on preliminary data as of January 12, 2006.



Distribution By Month: In 2005, the incidence of salmonellosis peaked in May and June, followed by a gradual decline starting in July (Figure 2). This was in contrast to the past five years when, on average, there was one peak in April and a second in July. Disease counts by month for the remainder of the year were consistent with previous years.



Distribution By County: Cumberland County had the highest number of cases with 47, representing 30% of all reported cases in 2005. York and Kennebec followed with 19% and 12%, respectively (Table). Lincoln, Cumberland, Waldo, Kennebec and York counties recorded the five highest case

rates with 17.8, 17.7, 16.5, 16.2, and 15.5 per 100,000 population, respectively.

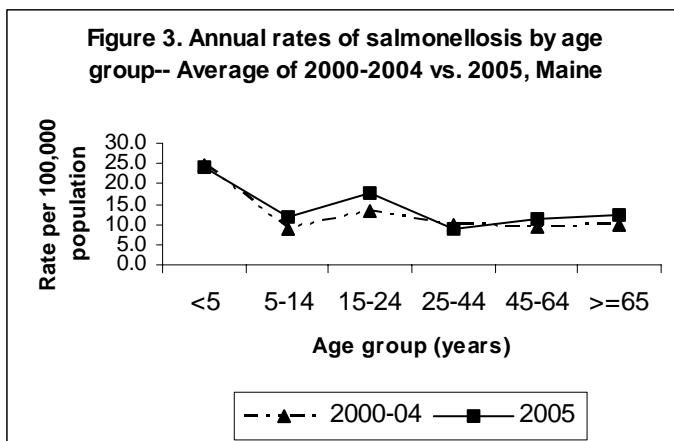
Table. Salmonellosis by county- Maine, 2005

County	Frequency	Percent [*]	Case Rate [§]
Androscoggin	10	6	9.6
Aroostook	6	4	8.1
Cumberland	47	30	17.7
Franklin	2	1	6.8
Hancock	6	4	11.6
Kennebec	19	12	16.2
Knox	2	1	5.0
Lincoln	6	4	17.8
Oxford	4	3	7.3
Penobscot	11	7	7.6
Piscataquis	0	0	0.0
Sagadahoc	4	3	11.4
Somerset	3	2	5.9
Waldo	6	4	16.5
Washington	2	1	5.9
York	29	19	15.5

[§]Rate per 100,000 population

^{*}Cumulative percentage may be >100 due to rounding

Case Rates By Age Group: Age is an important risk factor for salmonellosis. Consistent with national data, children under the age of five years had the highest risk of infection in Maine. During 2005, the rate of salmonellosis among children under five years was 24.0 per 100,000 population. This was followed by the rate among those 15 to 24 years (17.6 per 100,000), another high-risk group. Generally, age-specific rates for 2005 were similar to rates for the previous five years (Figure 3).



Clusters and Outbreaks: Maine identified nine clusters of salmonellosis during 2005 through Pulse-Field Gel Electrophoresis matching and routine investigations. The number of cases linked to these clusters represented an estimated 15% (24/157) of the reported cases. One of the clusters involved *Salmonella* serotype Kingabwa, first isolated in 1953 in the Democratic Republic of Congo. The molecular pattern identified with this cluster is rare in the United States. As of December 2005, only six matches had been posted to PulseNet, with two from Maine and the remainder from California, Idaho, Arizona, and Ohio. Epidemiological evidence suggested that contact with reptiles may have been the source of infection. Maine also participated in a national case-control study involving an outbreak of *Salmonella* serotype Typhimurium that was found to be associated with unpasteurized orange juice. The findings from this study led to a voluntary recall of the product.

Discussion and Recommendations

Results from the past season indicate that salmonellosis continues to be a major foodborne pathogen in Maine, especially in children and young adults. Human infection still occurs primarily through consumption of contaminated meat, poultry and eggs, although reptile-associated infections are thought to be increasingly important. Continued adoption and implementation by the food, produce, and pet industries of control measures introduced by the FDA and the USDA will reduce the incidence of salmonellosis in the State. In addition, as with all infectious diseases, prompt reporting is critical for effective and timely public health interventions.

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